

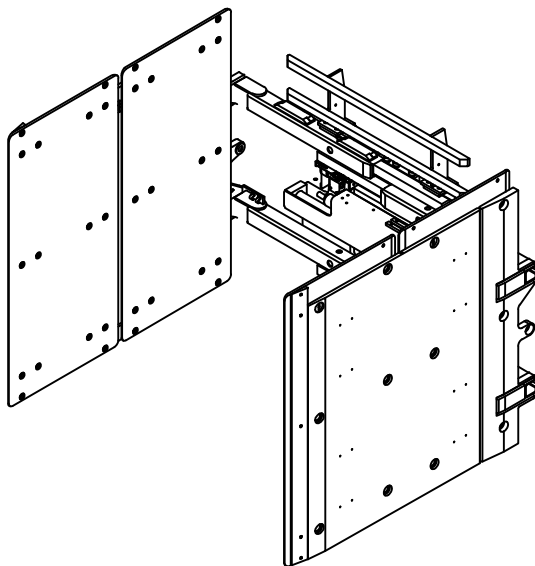
LORON

SERVICE MANUAL / PARTS LIST

CONTENTS:

APPLIANCE CLAMP SOFT TOUCH

MODEL #111037
PATENTS PENDING



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LIFT TRUCK REQUIREMENTS

CAPACITY

Capacity shown on the Clamp name plate is for the Clamp only. The combined truck and Clamp capacity is provided by the lift truck manufacturer.

CLAMP HYDRAULICS

Recommended Truck Pressure: 2100 to 2500 PSI (142 to 170 bar)

Hydraulic fluid: petroleum based hydraulic fluid only

Hydraulic supply group: includes hoses and take-up - one set for each function

Auxiliary valve:

2 Function (Side Shift & Clamp) = a double auxiliary valve

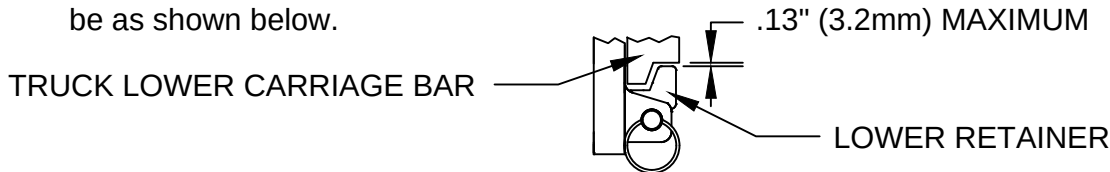
Oil Volume Settings:

Side Shift = 3 GPM

Clamp Open/Close = 7 GPM

GENERAL INSTALLATION PROCEDURES

1. Make sure that the attachment centering lug is completely seated in truck carriage center notch.
2. Clearance between the lower retainers that hold the attachment to the truck lower carriage bar should be as shown below.



3. Attach truck supply group (take-up) to clamp valve on attachment base.
4. Standing clear of the Clamp attachment cycle the attachment in and out several times. Use caution because partially filled hydraulic lines may cause erratic movement.

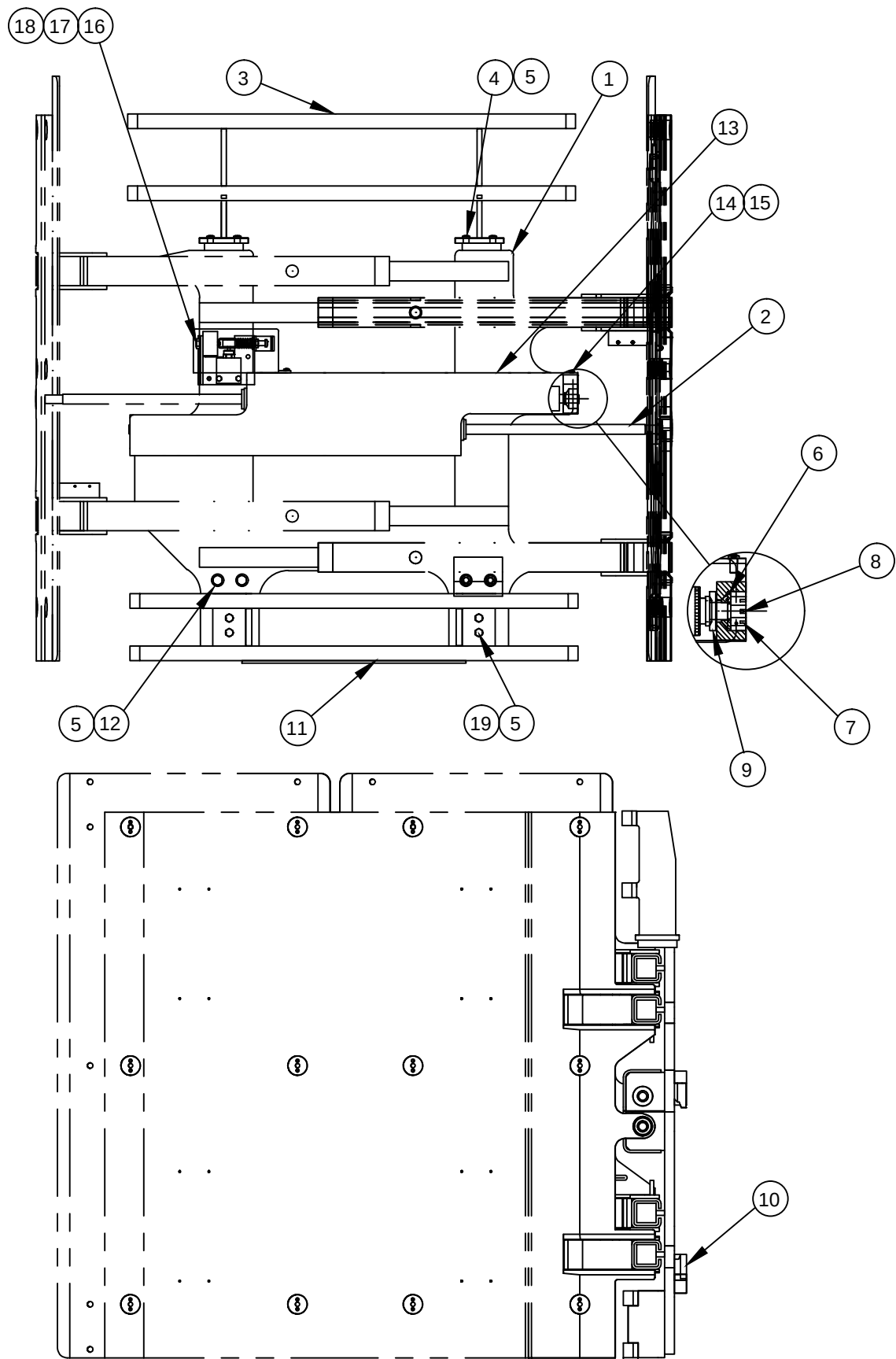
GENERAL INSPECTION AND MAINTENANCE

1. Check all hydraulic fittings, hoses, cylinders and valves for leakages - repair or replace as required
2. Check bladder/water pressure. If out of operating range adjust as required using Loron Pneumatic Fluid Pump #111785. Check clamp force and adjust. (See page 10.)
3. Time Schedule: Check pressure and clamp forces every 3 weeks.
Water pressure = _____ Clamp Force = _____
4. All bolts should be checked and tightened as required. See Torque Note page 2.
5. Check lower retainer clearance - see item 2 in General Installation Procedures above.

CLAMP ASSEMBLY - 1

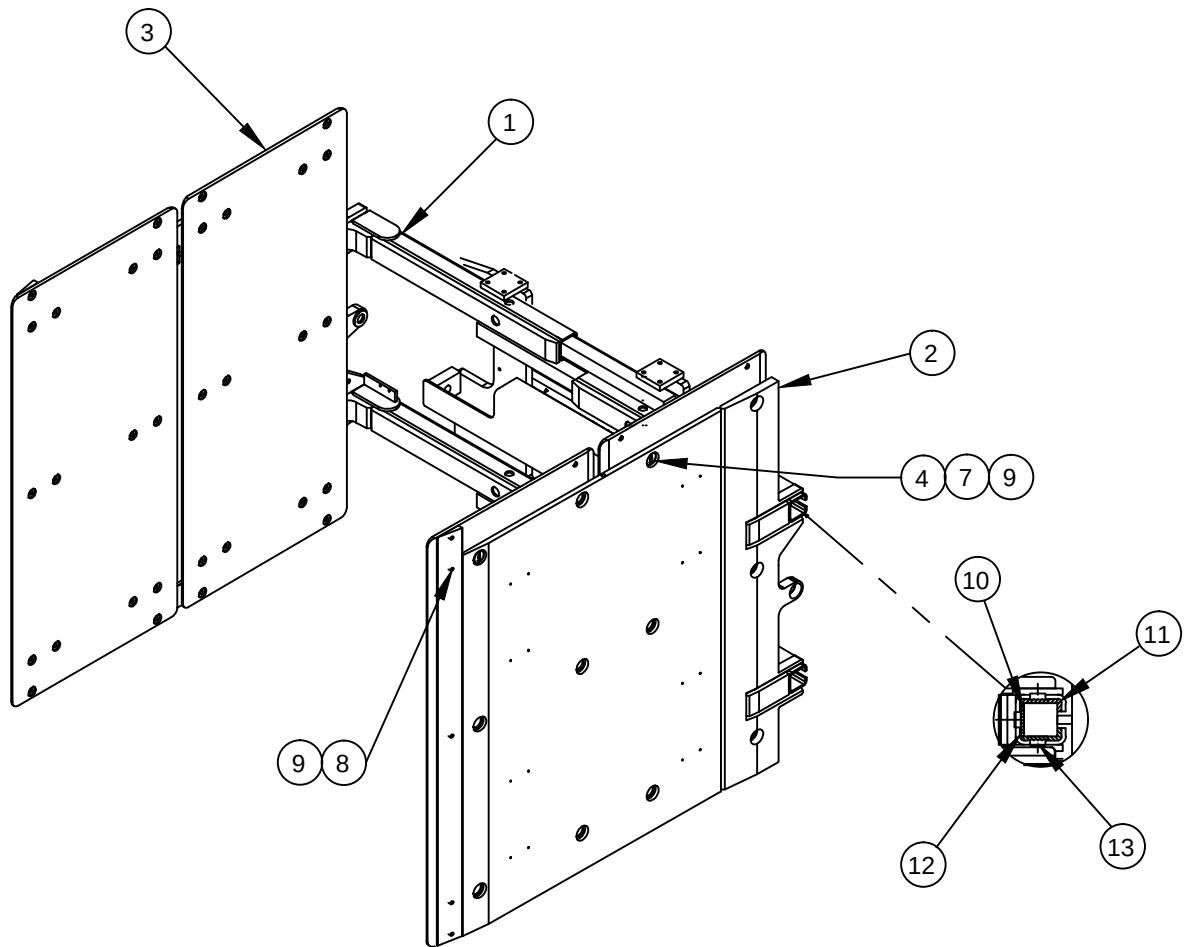
<u>#</u>	<u>QTY</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	1	111061	FRAME
2	2	111372.2	CYLINDER ASSEMBLY
3	1	101448.23	LOAD BACKREST
4	8	25G.0832	BOLT LSP
5	16	4E.08	LOCK WASHER LSP
6	4	101324	BEARING SPHERICAL
7	4	101333	CASTLE NUT
8	4	100574.86	COTTER PIN LSP
9	4	100047	CYLINDER WASHER
10	2	111060	HOOK LOWER RETAINER II
11	1	111068	LOWER LOAD BACKREST
12	4	1C.0824	BOLT LSP
13	1	111059	CYLINDER GUARD
14	4	25G.0608	BOLT LSP
15	4	2F.06	WASHER LSP
16	1	111090	COVER WELDMENT
17	2	25G.0512	BOLT LSP
18	2	4E.05	LOCKWASHER
19	4	1C.0828	BOLT LSP

CLAMP ASSEMBLY - 2



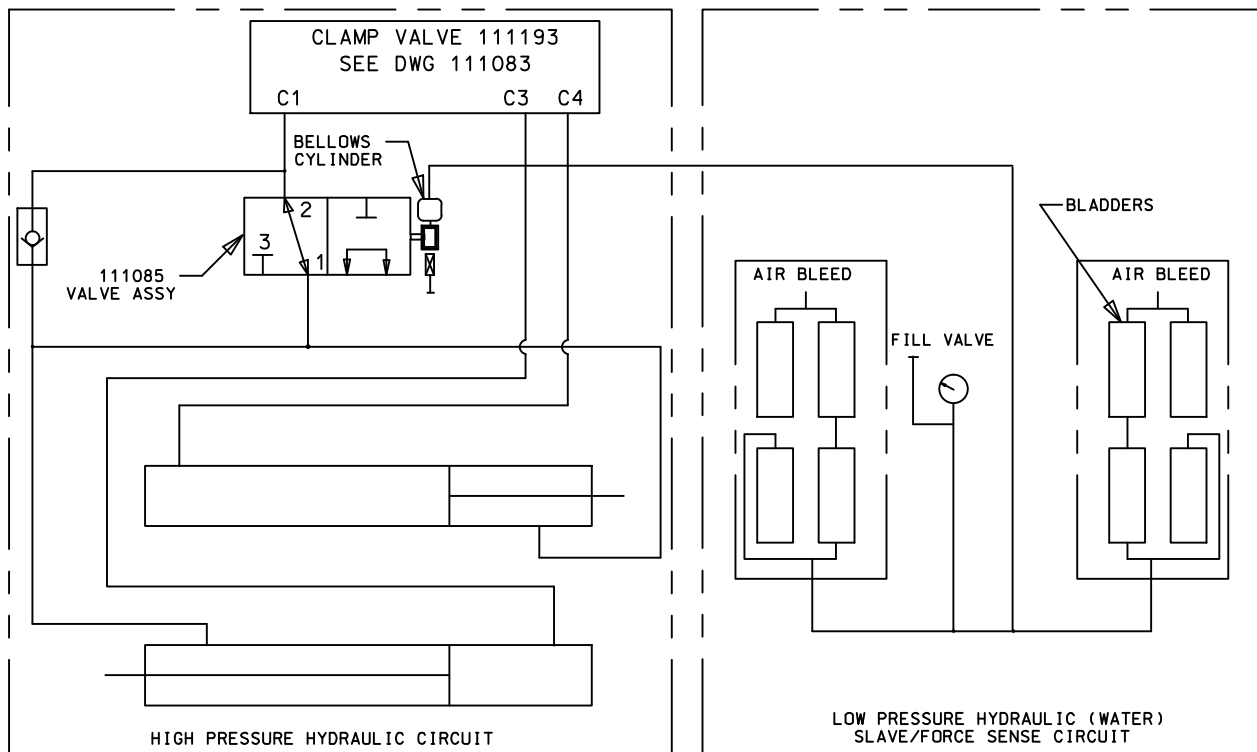
CLAMP ASSEMBLY - 3

#	QTY	PART #	DESCRIPTION
1	1	111065	ARM WELDMENT RH
2	1	111066	ARM WELDMENT LH
3	4	111018	CONTACT PAD
4	24	111031	RETAINING NUT
5	2	111019	CONTACT PAD
7	24	1C.0820	BOLT LSP
8	10	1C.0812	BOLT LSP
9	34	108088	SPRING WASHER
10	4	103210.1000	FLAT SLIDE
11	8	109211.1	ANGLE SLIDE
12	**	109212.1	SHIM *AS REQUIRED*
13	12	103752	SLIDE BUTTON

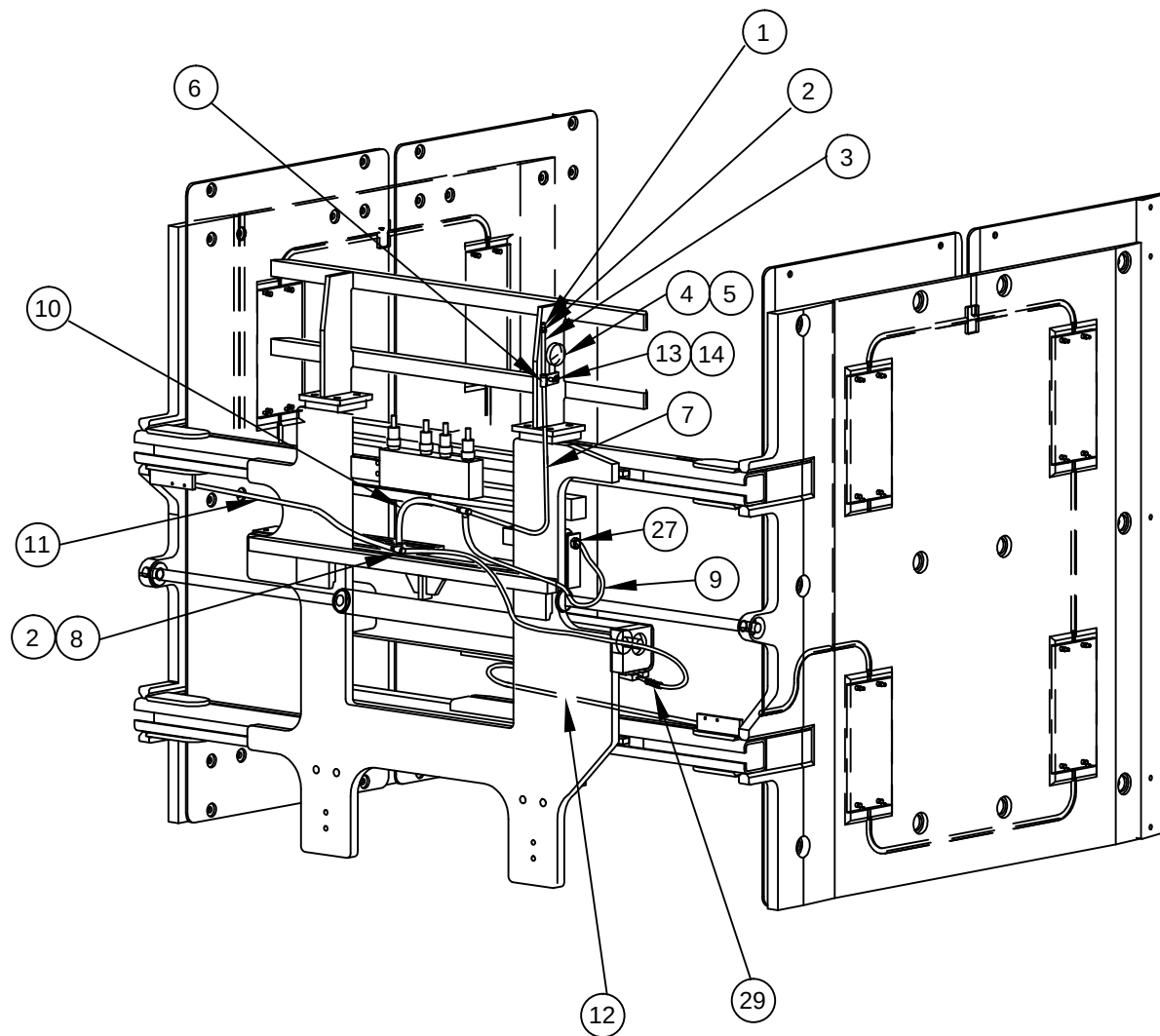


BLADDER / HYDRAULIC ASSEMBLY - 1

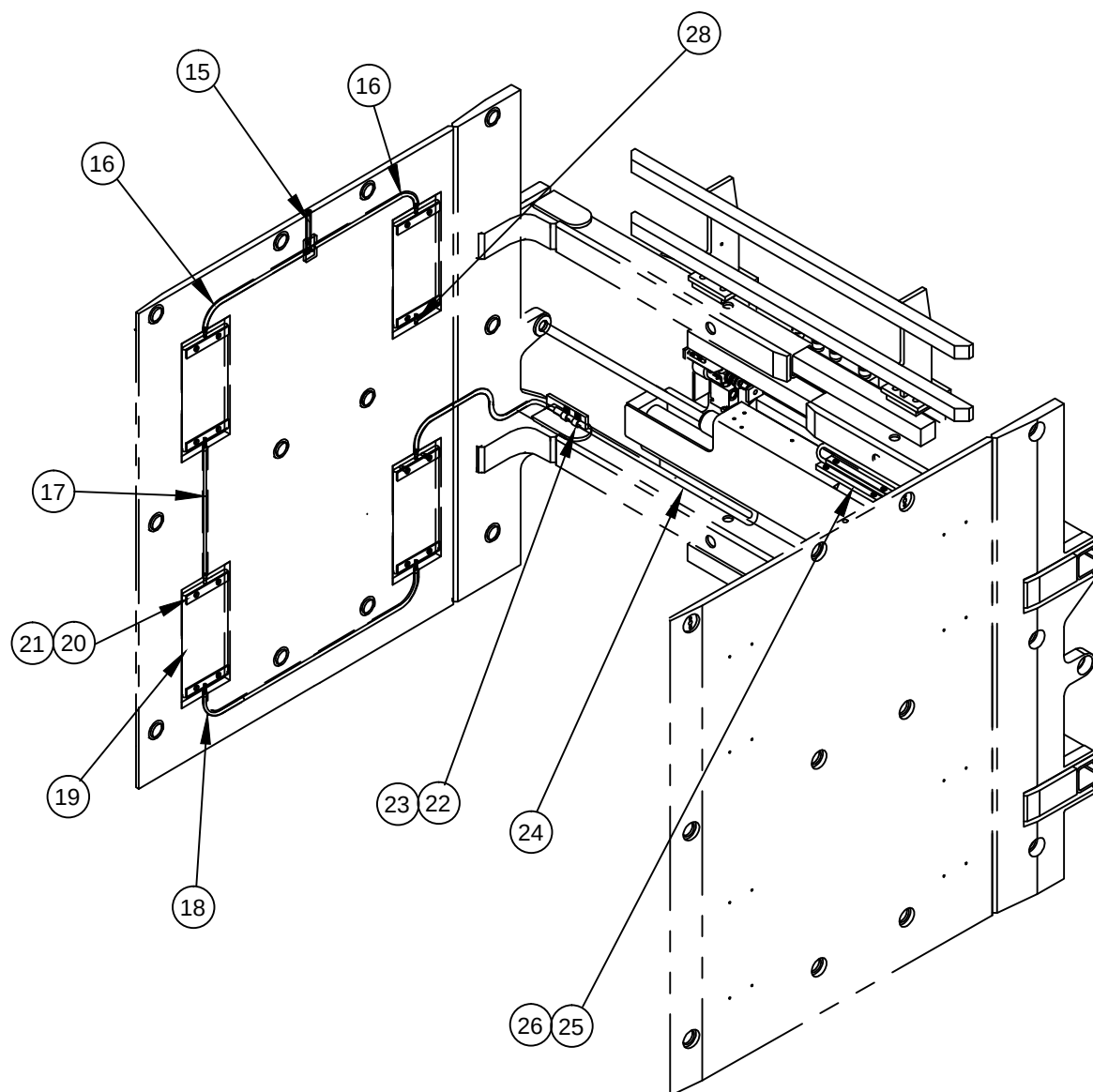
#	QTY	PART #	DESCRIPTION				
1	3	111350	AIR TANK VALVE	16	1	111290.0164	HOSE
2	34	111295	HOSE CLAMP	17	1	111290.0167	HOSE
3	1	111290.0025	HOSE	18	1	111290.0350	HOSE
4	1	111296	PRESSURE GAUGE	19	8	111030	BLADDER
5	1	111543.0100	FTG 90° ELL	20	32	9G.0412	BOLT LSP
6	1	111292	BRANCH TEE	21	16	111471	CLAMP BAR
7	1	111290.0184	HOSE LSP	22	8	109256	HOSE CLAMP
8	1	111293	RUN TEE	23	8	25G.0508	BOLT LSP
9	4	111290.0071	HOSE	24	2	100674.0310	COVER HOSE
10	1	111290.0155	HOSE	25	4	111128	HOSE GUIDE
11	1	111290.0782	HOSE	26	12	25G.0512	BOLT LSP
12	1	111290.0870	HOSE	27	1	111289	PIPE ELBOW
13	1	111299	HOSE CLAMP	28	2	111294	PLUG
14	1	25G.0516	BOLT LSP	29	2	111510	SPRING
15	2	111290.0037	HOSE	30	1	111085	DIRECTIONAL VALVE ASSEMBLY -REFERENCE-



BLADDER / HYDRAULIC ASSEMBLY - 2

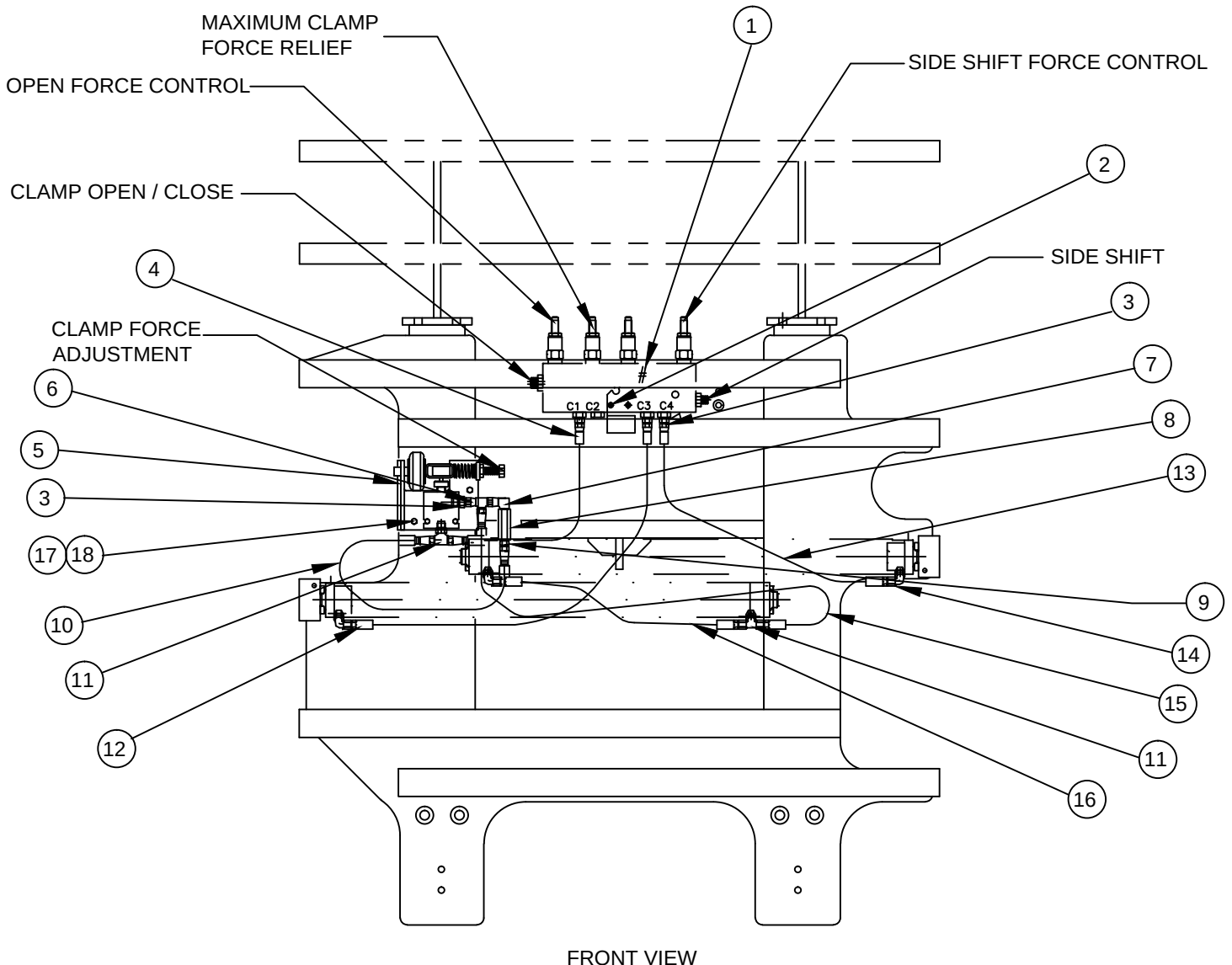


BLADDER / HYDRAULIC ASSEMBLY - 3



BLADDER / HYDRAULIC ASSEMBLY - 4

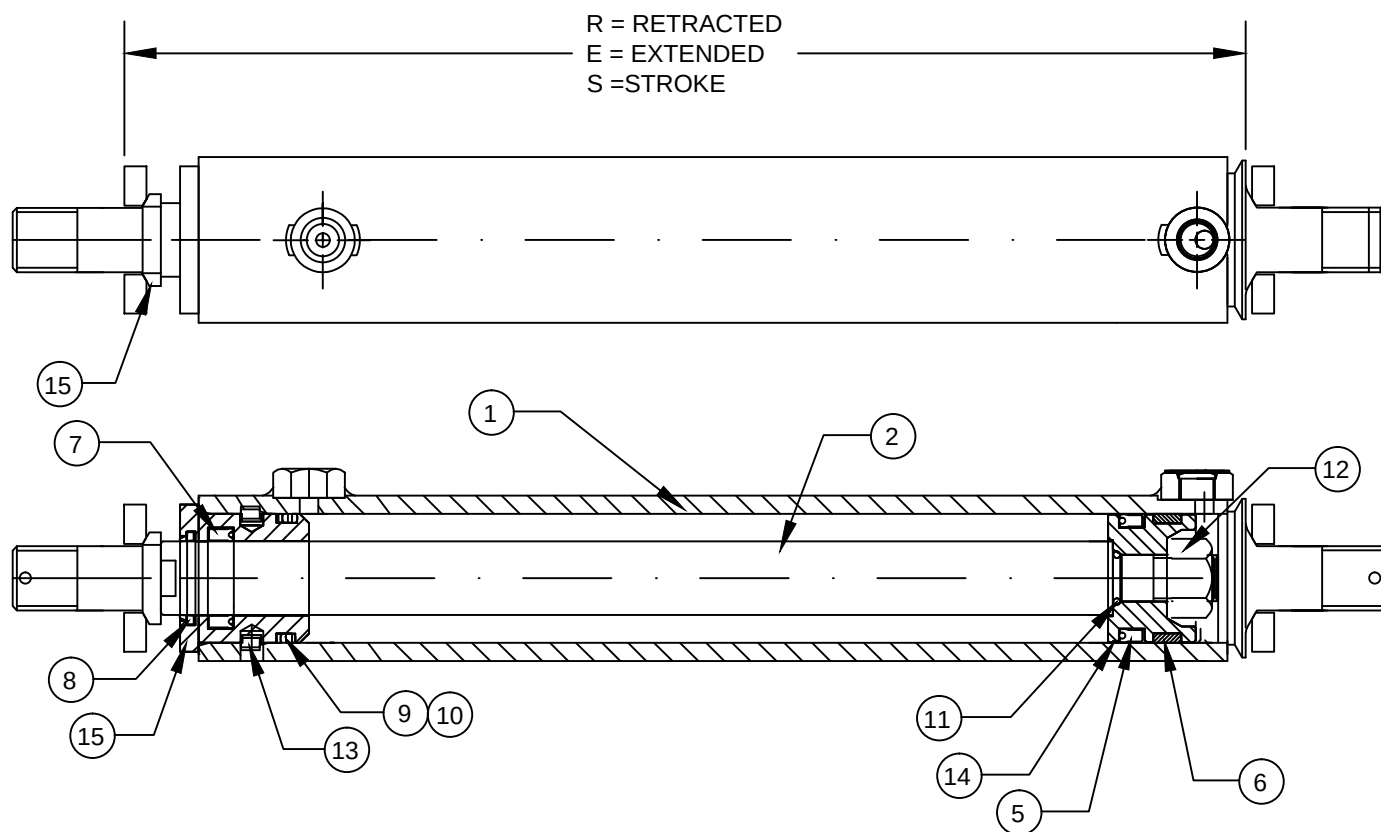
#	QTY	PART #	DESCRIPTION				
1	1	111193	CLAMP VALVE	11	2	100678.05	O-RING TEE BRANCH FITTING #6
2	2	25G.0524	BUTTON HEAD BOLT LSP	12	1	100674.0377	HOSE ASSEMBLY #06-06-06
3	4	100676.05	STRAIGHT THREAD ADAPTER O-RING #6-6 LSP	13	1	100674.0270	HOSE ASSEMBLY #06-06-06
4	1	100674.0210	HOSE ASSEMBLY 06-06-06 LSP	14	3	100095.05	90° FITTING #6 O-RING ELL
5	1	111085	DIRECTION VALVE ASSEMBLY	15	1	100674.0250	HOSE ASSEMBLY #06-06-06
6	1	100232.05	SWIVEL RUN TEE FITTING #6 LSP	16	1	100674.0342	HOSE ASSEMBLY #06-06-06
7	1	111073.05	STRAIGHT THREAD ADAPTER ELL PIPE TO SWIVEL	17	2	1C.0616	HEX HEAD BOLT
8	1	111123	IN LINE CHECK VALVE	18	2	4E.06	LOCKWASHER
9	1	100432.05	MALE ADAPTER FITTING				
10	1	100674.0240	HOSE ASSEMBLY 06-06-06				



CYLINDER ASSEMBLY

PART #	R	E	S	NET STROKE
111372.1	33.20	61.64	28.44	28.44

#	QTY	PART #	DESCRIPTION	9	1	100029.2	"O" RING LSP
1	1	111375.2	TUBE WELDMENT	10	1	100028.2	BACK-UP RING LSP
2	1	111379.2	ROD	11	1	100029.201	"O" RING LSP
4	1	111482	SEAL KIT INCLUDES	12	1	27D.10	NUT SELF LOCK LSP
5	1	100032.6	WEAR RING LSP	13	1	100027.7	LOCK WIRE
6	1	102099.1	POLY-PAK "B" LSP	14	1	111374	PISTON
7	1	100031.7	POLY-PAK LSP	15	1	111373	GLAND
8	1	102098.5	ROD WIPER LSP	16	1	111380	WASHER CYLINDER



CYLINDER SERVICE

- Prior to assembly lubricate seals, cylinder bore and rod with STP.
- Inspect all parts for scratches, nicks and gouges- -replace all damaged components.
- Inspect cylinder bore and rod for scoring- -replace if scored
- Avoid damage to seal grooves- -use a dull screwdriver for seal removal
- Torque piston nut to 110 FT/LBS. (15.3 kg-m)

CLAMP ADJUSTMENTS

CLAMP FORCE CHECK/ADJUSTMENT

1) Check water pressure. If out of operating range fill with Loron Pneumatic Fluid pump # 111785.

Note: when operating in below freezing temperatures us RV antifreeze in place of water.

2) Check the clamp force. the most accurate method is to use the Loron force plate while clamping on an actual load.

The force can also be checked using a stationary fixture. this is not as accurate because the fixture is stiff and doesn't simulate a load.

OPEN FORCE CHECK/ADJUSTMENT

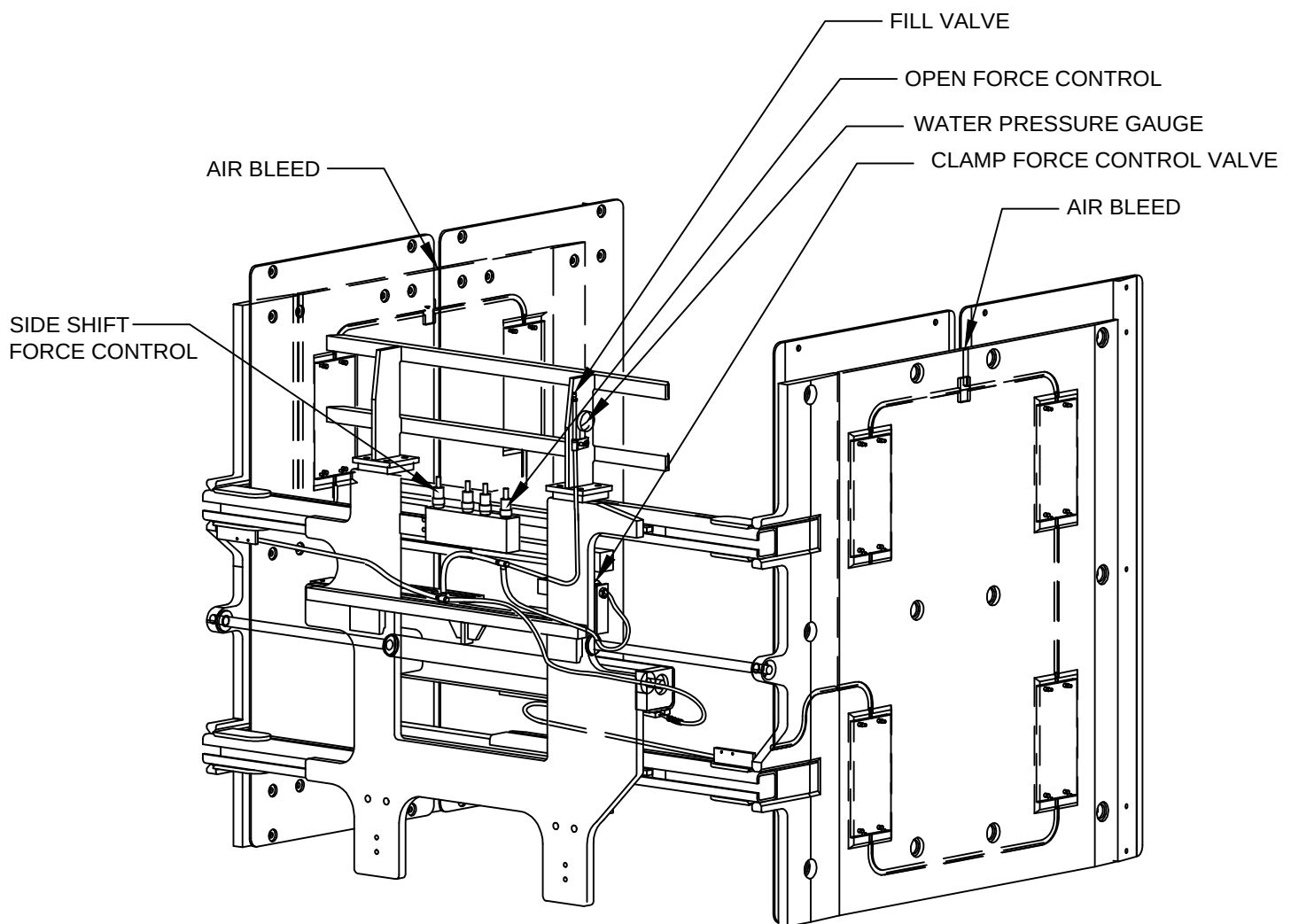
Open the arms against a force fixture and adjust for desired maximum force.

SIDE SHIFT FORCE ADJUSTMENT

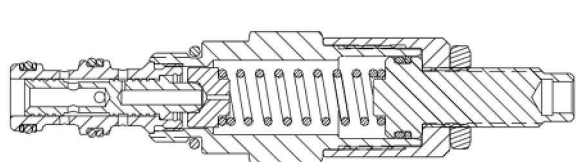
1) Clamp on the heaviest load that will be handled

2) Adjust the side shift force down until the arms stop

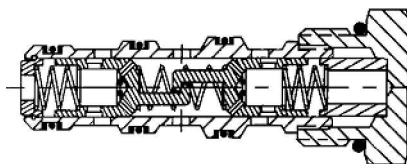
3) Turn the adjusting screw one turn in.



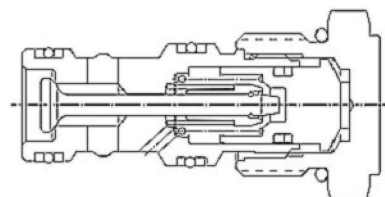
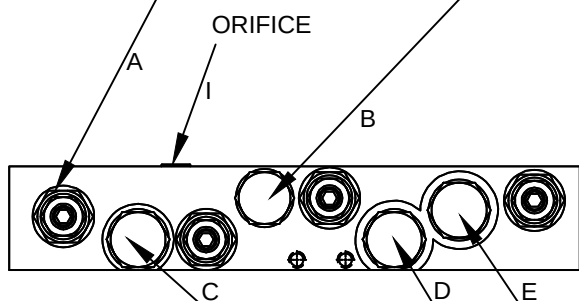
CONTROL VALVE



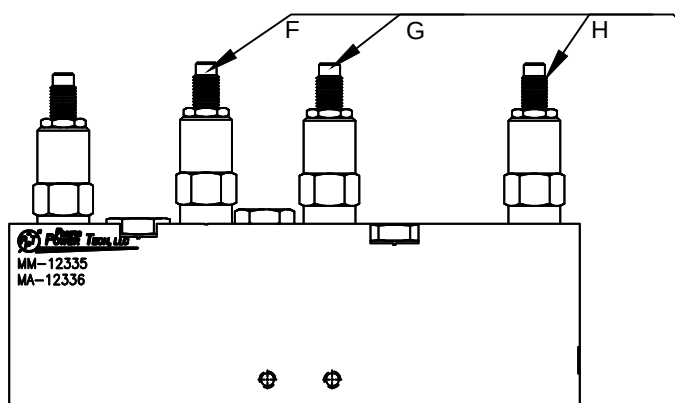
111627 REDUCE/REL. VALVE TORQUE 15-20 FT/LBS
SEAL KIT 112065



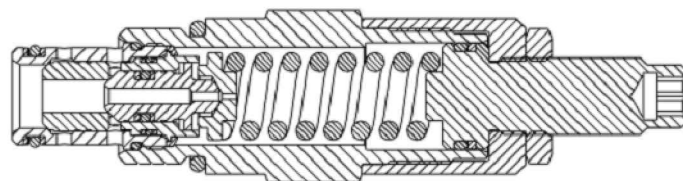
103813 FLOW DIVIDER TORQUE
10-12 FT/LBS 104711 SEAL KIT



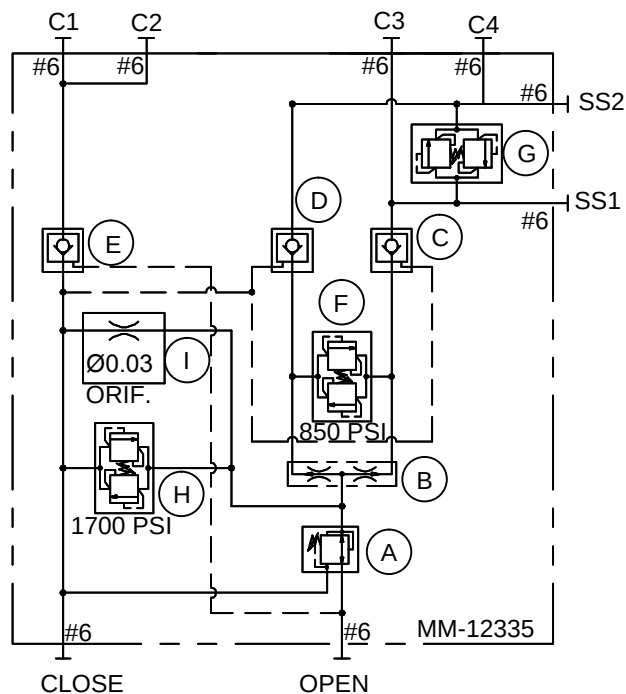
111244 CHECK VALVE TORQUE
30-35 FT/LBS SEAL KIT 112059



112060 RELIEF TORQUE 20-25
FT/LBS SEAL KIT 112064



HYDRAULIC SCHEMATIC



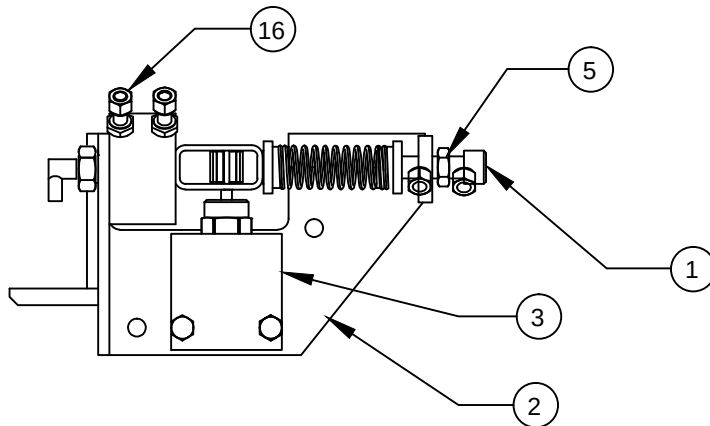
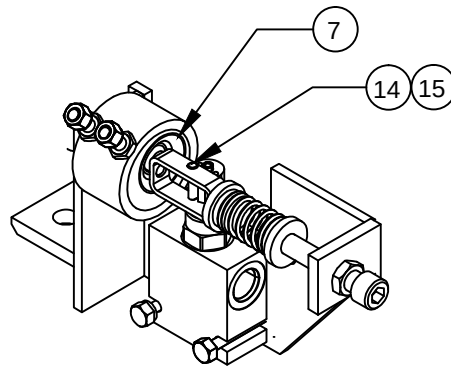
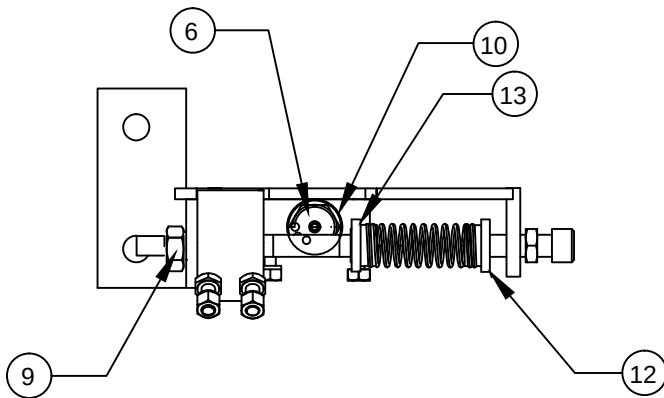
NOTE:

1. Lubricate threads & seals prior to assembly.
2. For VALVE pressure changes See page 9.

QTY	PART #	DESCRIPTION
1	111627	PRESSURE REDUCE / RELIEF VALVE
1	103813	FLOW DIVIDER
3	112060	BI-DIRECTIONAL RELIEF VALVE
3	111244	P.O. CHECK CARTRIDGES

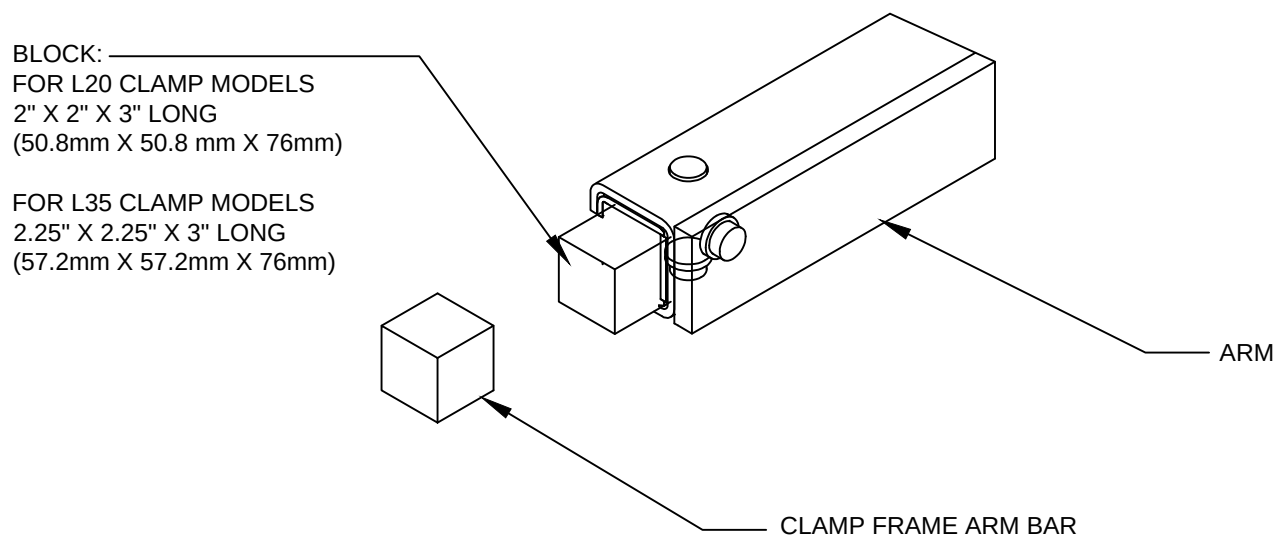
CLAMP FORCE CONTROL VALVE

#	QTY	PART #	DESCRIPTION	9	1	1D.10	HEX NUT
1	1	11G.0844	BOLT	10	1	111328	WHEEL HOUSING
2	1	111573	MTG PLT WDMT	11	1	111097	SPRING
3	1	111094	DIRECTIONAL	12	1	111098	SPRING TENSION CAP
4	2	4E.04	LOCKWASHER	13	1	111572	SPRING CAP
5	1	7D.08	JAM NUT	14	1	111655	CLEVIS PIN
6	1	110906	WHEEL	15	1	100574.28	COTTER PIN
7	1	111091	AIR SPRING	16	2	17D.05	NUT NYLOCK (USE W/ LBR MOUNTING
8	2	1C.0424	BOLT				



ARM SLIDE & SHIM REPLACEMENT

1. To replace the slides extend the arms to the fully open position. Release system pressure prior to removing the arms by turning the truck off and working the side shift and clamp function controls several times.
2. Support the arm with an overhead crane or lift truck. Be sure to secure the chain or sling in a manner that prevents the arm from falling out of the chain or sling when hanging free of the clamp frame.
3. Remove the cotter pin, slotted nut and spherical bearing from the end of the clamp cylinder rod. Keeping hands and feet clear, carefully slide the clamp arm off of the clamp frame.
4. Install the arm on the clamp frame ensuring that the arm moves freely without excessive binding. If the arm is too loose or too tight add or remove shims as required. Once the clearance is satisfactory insert the cylinder rod into the cylinder anchor on the arm. Install the spherical bearing, nut and cotter pin onto the cylinder rod end. Be sure to leave .03" - .06" (.7mm to 1.5mm) clearance to allow the cylinder to "float" on it's mountings (see page 4). Remove the cotter pin, slotted nut and spherical bearing from the end of the clamp cylinder rod. Keeping hands and feet clear, carefully slide the clamp arm off of the clamp frame.



5. Inspect slides and slide buttons for wear. Slides may be rotated end-for-end and re-used if excessively worn on the outer end only. Extra shims may be used to tighten operating clearance on slightly worn slides. Replace any slides worn to less than .06" (1.5mm) thick or any slide that is deeply scored or broken.
6. To aid in replacing the slides a block may be fashioned of wood or another convenient material to the dimensions shown above. The block is inserted in the end of the arm to hold the slides, shims and buttons in position while the arm is inserted over the arm bars on the clamp frame. The block is expelled out the opposite end of the arm as the arm is pushed onto the frame.
7. Prior to installing the arm the block may be used to determine the number of shims to place under the slides. Adjust the clearance between the slides and the block to provide approximately .06" (1.5mm) running clearance between the slides and arm when installed.

TROUBLE SHOOTING GUIDE

LOADS SLIPPING OR DROPPING

POSSIBLE CAUSES

1. Clamp force set too low
2. Internal leakage in cylinder.
3. Load too heavy for the clamp capacity
4. Load may not be stacked correctly or may need to be unitized
5. Bent arms or contact pads
6. Damaged / leaking hydraulic hose

SOLUTIONS

1. Adjust clamp force
2. Replace cylinder seals. If tube, piston or rod is scored replace with new parts.
3. Consult factory.
4. Restack or unitize load (shrink wrap)
5. Consult factory.
6. Replace damaged hose

CRUSHING LOADS

POSSIBLE CAUSES

1. Clamp force set too high
2. Bent arms or contact pads
3. Leak in bladder system

SOLUTIONS

1. Adjusting clamp force, page
2. Consult factory
3. Check for leaks and repair.

ARM CHATTERING OR ERRATIC MOVEMENT

POSSIBLE CAUSES

1. Bent clamp arms
2. Nylon slides sticking
The slides are self lubricating
 - a) When new the slides may need lubrication for break in.
 - b) If the slides are contaminated they should be cleaned.Note: Sticking slides can cause inconsistent clamp force measurements
3. Nylon slides worn, broken or missing.

SOLUTIONS

1. Consult factory
2. Clean slides if necessary and lube with a dry lube such as silicone or paraffin.
3. Replace damaged slides, shims and retaining buttons.